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Nonlinear Equations Driven by Fractional Laplacian Operators

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Message from the Guest Editors

Fractional Differential Equations, an extension of the usual differential equations, broaden the scope of differentiation and integration to encompass arbitrary real or complex orders. Moreover, this topic has been attracting the attention of numerous researchers due to its rich applicability across several branches of science and technology. These equations play a pivotal role in describing various phenomena, including anomalous diffusion, viscoelasticity, fractional quantum mechanics, fractional dynamical systems, control theory, signal processing, and others in the fields of physics, biology, chemistry, economics, geophysics, engineering, and beyond. Unlike classical methods, problems involving fractional operators adeptly capture non-local and memory effects in complex systems, providing accurate models where traditional approaches fall short.

This Special Issue aims to pave the way for innovative solutions and breakthroughs in the intricate new realm of equations driven by fractional operators, addressing real-world challenges and/or abstract mathematical problems.